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Mind the Gap! Social Capital, East and West

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Abstract

Recent Eurobarometer survey data are used to document and explain the stock of social capital in 28 European countries. Social capital in Central and Eastern Europe – measured by civic participation and access to social networks – lags behind that in Western European countries. Using regression analysis of determinants of individual stock of social capital, we find that this gap persists when we account for individual characteristics and endowments of respondents but disappears completely after we control for aggregate measures of economic development and quality of institutions. Informal institutions such as prevalence of corruption in post-communist countries appear particularly important. With the enlargement of the European Union, the gap in social capital should gradually disappear as the new member states catch up (economically and institutionally) with the old ones.

Keywords: social capital, institutions, capitalism, transition

JEL codes: Z13, P37, O57, O17

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1 Introduction

Over the last decade, the interest in studying social capital has grown enormously among sociologists, political scientists and economists alike. While social capital is hardly a new concept, it has been greatly popularized by the seminal work of Robert Putnam (1993). In his twenty-year long research on the quality of local governments in Italy, Putnam identified differences in *civic participation* (which he proxied, most notably, by membership in voluntary organizations) as the source of vast disparities in institutional quality and in turn economic performance between the North and South of Italy. A plethora of research has followed, and social capital (which, as a general term, encompasses Putnam's civic participation) was found to have important real-life repercussions, in particular in economic, social and political development of societies. Macroeconomic studies (Knack and Keefer, 1997; Whiteley, 2000 and Beugelsdijk and van Schaik, 2005) have found that, in cross-country perspective, higher density of trust and/or active membership in organizations is associated with higher growth. Offering an historical perspective on the issue, Greif (1994) argues that cultural underpinnings of social interactions in medieval societies played a crucial role in reducing free riding and opportunistic behavior. These empirical findings cement Coleman's (1988) assertion that social capital, just like other forms of capital, is productive and facilitates the attainment of goals that otherwise would not be possible. Accordingly, high stock of social capital increases individuals' ability and willingness to cooperate, improves monitoring and enforcement of contracts, reduces free-riding and lowers information asymmetry. Social capital therefore lowers transaction costs, fosters innovation and dissemination of technology and thus leads to better economic outcomes.

Despite the increasing recognition of the importance of social capital for economic outcomes, our understanding of factors that determine the stock of social capital – at the individual or aggregate levels – is still very limited. This is a major shortcoming (see Glaeser, 2001), because "the dearth of research on determinants of social capital has held back its use as a policy tool in economic and social development" (Rupasingha et al., 2006: 84). The previous literature is concerned largely with *measuring* the stock of social capital (usually at the aggregate, national level) and its change over time and with investigating its impact on the variable of interest (typically economic and/or institutional development of countries). Little attention is

given to analyzing the factors that *determine* the individual stock of social capital and/or explaining the sources of cross-sectional differences across countries.[1]

This paper therefore constitutes one of the few attempts to bridge the gap between theory and empirics. Its contribution is three fold. First, we introduce a new and previously unavailable comparative dataset, based on multiple Eurobarometer surveys featuring a number of alternative measures of social capital for a sample of 28 European countries: including the old member countries of the European Union and the new member countries. This data set allows us to investigate whether and why cross-sectional differences in social capital exist in Europe.

Second, we take the analysis of the determinants of the individual stock of social capital[2] to another level by considering individual and aggregate (country specific) factors alike. By using large multi-country data sets of individual respondents, our study permits the simultaneous identification of individual-level and societal-level determinants of social capital.

Finally, by focusing on the formation of social capital in the enlarged EU, we aim to shed more light on the existing gap in the stock of social capital between the developed Western countries and the formerly communist countries of Central and Eastern Europe. As the data we are using were commissioned by the European Commission, our analysis is necessarily constrained to include only the old and the new member countries of the EU. Though there has been some research studying social capital in post-communist countries separately (see Paldam and Svendsen, 2000; Adam et al., 2004), to the best of our knowledge, we are the first to systematically develop and jointly analyze the formation of social capital in both developed and transition countries. [3] We construct measures applicable to both groups of countries and analyze them in a unified framework. We then discuss our findings specifically in the context of the enlargement process.

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[1] Furthermore, that work is largely theoretical in its nature (see Alesina and La Ferrara, 2000; Glaeser et al., 2002). Empirical attempts, on the other hand, are fairly recent and tend to focus primarily on social capital in one country (see Glaeser et al., 2002 for evidence in the United States and Groot et al., 2007 for evidence on the Netherlands). For a recent extensive overview of social capital literature, see Durlauf and Fafchamps (2004).

[2] We employ the same definition as in the micro-economic literature, according to which individual social capital consists of one's social attributes that can be beneficial while interacting with other individuals. For a detailed discussion, see Glaeser et al. (2002).

[3] With the exception of Cyprus, Malta and Turkey, all new member countries are former communist countries. This shared legacy of communism and central planning is one of their main distinguishing features in comparison to the old member countries of the EU. Therefore, the on-going post-communist transition process is an important aspect of our analysis.

In the previous literature on enlargement or, more generally, the process of transition from communism to democracy and market economy, the focus has been on real and nominal convergence and convergence in formal institutions (i.e., laws and regulations). Informal institutions (i.e., norms, relationships, and rules of behavior) have not received much attention. In this paper, we draw guidance from recent developments in the new institutional economics. That literature stresses the importance of informal institutions and their role in explaining differences across developed and less developed (both developing and transition) countries (see North, 1990; Feige, 1997). Given that the formerly communist countries are still going through transformation, involving tremendous institutional restructuring, it is very important that informal institutions develop in parallel to formal institutions, so that the two remain compatible. If this happens, the transaction costs of such institutional restructuring, expressed in the form of predatory activities such as corruption and tax evasion, will decrease (see Pejovich, 2003). On the other hand, if formal and informal institutions are in conflict with each other, more of such predatory activities may be expected, as shown empirically by Gërxhani (2004).

Our analysis confirms the existence of a gap in social capital between Western and Eastern European countries. However, our findings suggest that this gap reflects the lower level of economic development and the lower quality of institutions in the latter countries. As such, it should gradually disappear as the post-communist countries catch up with respect to both their economic development and the quality of institutions. We also discuss, albeit very tentatively, the potential impact that EU enlargement can have on intra-European convergence in social capital levels.

The paper is organized as follows. The next section reviews the previous literature about social capital and its measurement. Section 3 introduces our data and explains the measures that we use. Section 4 provides empirical insights on the individual determinants of social capital. Section 5 completes the analysis by integrating individual and aggregate factors. Section 6 concludes.

2 Social capital and its measurement

2.1 What is social capital?

As a consequence of the variety of aspects it thought to embody, social capital has been defined in various ways. Although the concept itself originates from Loury (1977) and later Bourdieu (1986), Coleman's (1988) definition has become especially popular. Coleman, presenting a sociologist's view, defines social capital as a component of human capital that allows members of a given society to trust one another and cooperate in the formation of new groups and associations. Putnam (1993: 664-665), a political scientist, offers a broader definition of social capital as encompassing "features of social life – networks, norms, and trust – that enable participants to act together more effectively to pursue shared interests". Stiglitz (2000), an economist, sees social capital – which he delineates as encompassing tacit knowledge, networks and reputation – as a social means to tackle moral hazard and incentive issues. Broadly speaking, all these definitions refer to trust, cooperative behavior and networks between groups, as essential components of social capital (Knack and Keefer, 1997). In the presence of trust, cooperation is easier and therefore the frequency and density of networks is expected to be higher.[4] Interaction through networks in turn enhances trust and cooperative ability. According to Dasgupta (1988), social capital can make economic transactions more efficient by expanding the parties' access to information, enabling them to coordinate activities for mutual benefit and reducing opportunistic behavior through repeated transactions. In addition, Putnam (1993) argues that participation in civic associations can contribute to the effectiveness and stability of democratic governments, both because of their 'internal' effects on individual members and because of their 'external' effects on the wider polity. "Internally, associations instill in their members habits of cooperation, solidarity, and public-spiritedness. Externally, 'interest articulation' and 'interest aggregation' are enhanced by a dense network of secondary associations" (Putnam, 1993: 89-90). All in all, these studies are fundamentally based on the assumption that

[4] The direction of causality is not clearly resolved, however. Gambetta (1990), for example, argues that trust follows rather than causes cooperation.

social capital is one of the the primary forces, which shapes social and economic development.[5]

There is however theoretical (see Lipset, 1959; Flanagan, 1987; Inglehart, 1997) and empirical (see Inglehart and Baker, 2000; Paugam and Russell, 2000; O'Connell, 2003; Casey and Christ, 2005) research that either questions the validity of such an assumption or substantiates the opposite direction of causality. In other words, these studies argue that social capital may mediate economic development but not determine it, or that social capital is in fact determined by economic outcomes. Focusing particularly on one aspect of social capital – civic involvement in associations – sociologists and political scientists have found that the higher the GDP per capita, the higher the level of education and as a consequence wealth, and therefore the easier the shift toward the 'post-materialist' values of well-being, tolerance, and trust – values which in turn support the development of associations (see Inglehart, 1990; 1997). The relationship between social capital (measured as membership in organizations) and democracy has also been researched. Discussions (mainly theoretical) on this relationship are also split around the issue of causality. In a fairly recent empirical study, however, Paxton (2002) finds that the relationship between social capital and democracy is reciprocal so that they simultaneously affect each other.

Obviously, whether social capital affects social, political and economic development or the other way around or whether the relationship is simultaneous remains a controversial issue. Because of the popularity of the concept emerging from the focus on the effect of social capital on societal development, in spite of some studies (as mentioned above) the reverse effect is however under-researched. In order to better understand the development of nations, more research is needed on the determinants of social capital. Agreeing with social psychologists, Greif (1994) argues that the level of development and the organization of an economy may determine whether societies develop 'collectivist' or 'individualist' characteristics. The former tend to build up group-specific social capital (i.e., pertaining to one's family, religious or ethnic group) and rely on informal enforcement, whereas the latter

[5] Nevertheless, it is now widely recognized that social capital may also have less desirable consequences. For an extensive discussion, see Portes (1998).

are based on interaction across groups that invest in generalized social capital and formal enforcement rules.[6]

At a first instant, an analogy can be observed between Greif's categorization of societies and the two groups of countries analyzed in this paper. The old member states of the EU (with most of them being highly developed countries) are generally characterized by a high density of economic transactions among groups, well-established institutions, high level of generalized trust, high participation in civil associations and a bottom-up structure of economic transactions. Correspondingly, they would seem to fall into the category of individualist societies. New member countries (predominantly less developed countries), on the other hand, feature relatively large underground economy, greater extent of corruption and state failure, low levels of generalized trust and participation in civil associations and a top-down structure of economic transactions. Hence, they come close to Greif's description of collectivist societies. Moreover, with the exception of Cyprus, Malta and Turkey, the new member countries are all post-communist societies. Research on social capital in these countries has put forward a so-called dictatorship theory of missing social capital (see Raiser, 1999; Kunioka and Woller, 1999; and Paldam and Svedsen, 2000, 2001). According to this theory, dictatorships destroy social capital, group-specific and generalized alike. Moreover, they create conditions whereby, when dictatorships collapse, societies may even accumulate 'negative' social capital, which in turn impedes economic growth. During the transition period in most of the new member countries, 'positive' social capital has seemingly dissipated and 'negative' social capital, taking the form of underground activities, corruption and organized crime, has become more prominent. The gap, created by the sudden destruction of old institutions and the creation of new ones, provided a favorable environment for the persistence or even further accumulation of 'negative' social capital throughout transition.[7] The dictatorship theory of destroyed social capital thus adds a new dimension to Greif's categorization. Within the so-called collectivist societies, there

[6] Svendsen and Svendsen (2004) use notions of 'bonding' and 'bridging' social capital, respectively, to describe what we call group-specific and generalized social capital. The 'bridging' social capital is the beneficial one because it captures "open networks that are outward looking and encompass people across diverse social cleavages." (p. 2)

[7] The extent to which this 'negative' social capital (i.e., underground activities or corruption) has emerged varies per country. Rose (2000) relates it to the supremacy of the totalitarian regime these countries experienced during communism. The same line of argument can be found in Putnam et al. (1993), where the low level of social capital in South Italy is attributed to the long absolutist regime of the Kingdom of Sicily.

are countries which due to the legacy of communism may possess neither generalized nor group-specific social capital, and may even have an inherited stock of 'negative' social capital.[8]

These characteristics of post-communist countries provide another evidence of the causation running from democracy to social capital. "Given the totalitarian tendencies of state socialist systems, an autonomous civil society rarely emerges in a bottom-up fashion, except when the regime is in serious crisis. Instead, its emergence is often the result of top-down efforts, that is through tolerance, encouragement, or sponsorship by state policies (Tong, 1994: 334).

2.2 Measurement of social capital [9]

The literature tends to attach the label *social capital* quite liberally to a number of concepts that are not necessarily equivalent to each other. The following are the most popular empirical measures of generalized social capital:

1 Civic participation, generally captured by membership in voluntary organizations, was pioneered by Putnam's (1993) seminal work on Italian regions. Through membership in voluntary organizations, one learns to interact with other people – both acquaintances and strangers – in a cooperative manner and to solicit their cooperation to achieve a shared objective.[10] As such, voluntary organizations introduce their members to advantages and practice of collective action (Olson, 1982). Later work further distinguishes between Putnamesque and Olsonian organizations (see Knack and Keefer, 1997). The former, such as educational, sport and art clubs, religious and charitable organizations and youth groups, allow their members to build up social capital and pursue common goals without imposing negative externalities on the rest of the society. The latter, including political parties and movements, trade unions, professional associations, and various interest groups, tend to engage in collective action that may reconfigure redistribution

[8] Needless to say, given the main argument in the literature that the generalized social capital is more beneficial to a society as a whole in the long run, the focus of this paper is on this type of social capital.

[9] For a critical review of empirical analysis of social capital, see Durlauf (2002).

[10] For instance, participating in team sports or playing an instrument in an orchestra requires an extraordinary degree of cooperation, coordination and discipline. The fans of *The Simpsons* television series may recall Lisa Simpson's unsuccessful attempt at individualism when playing the saxophone in a school orchestra, which illustrates this point rather well.

systems in their favor at the expense of the rest of the society. Therefore, in contrast to Putnamesque groups, which are thought to play a positive role in the society, the impact of Olsonian groups may be distinctly negative.

2 Trust, popularized by Fukuyama (1995), is the most commonly used empirical measure of social capital. Its empirical popularity is largely due to the availability of extensive cross-country survey data on *generalized trust* (collected within the framework of the World Value Surveys program). Typically, trust is defined as the extent to which people find strangers trustworthy.

3 Density of networks is a measure of ties between individuals. Network-based ties can be formal or informal. In formal networks, ties between individuals take the form of joint presence at a formal event or membership in an organization. Alumni associations are an example of formal networks which may partially overlap with membership in voluntary organizations. Informal networks, on the other hand, embody informal relations among friends, members of (extended) family, colleagues and the like. As argued in Paxton (1999), while informal networks are primarily based on ties between individuals, formal networks go beyond that by accessing and creating additional group-level benefits.

4 Philanthropic generosity (i.e. altruism). This measure is based on Putnam's (2001) finding that the frequency of charitable contributions in the US over time has been highly correlated with membership in voluntary organizations.

The following section provides a description of the data and methodology used, and explains how social capital is operationalized in this paper.

3 Social capital in Europe

Our measures of social capital utilize several recent Eurobarometer surveys commissioned by the European Commission and carried out by Gallup Europe.[11] Two types of surveys are used. First, the standard Eurobarometer surveys (henceforth EB) were carried out in the 15 countries that were members of the European Union at the

[11] We are grateful to Robert Manchin of The Gallup Organisation Europe for kindly making these data available to us.

time.[12] Second, as of 2000, similar surveys were carried out also in the new member countries.[13] As the new members were still candidates for EU membership at that time, these surveys were referred to as Candidate Countries Eurobarometers (henceforth CCEB). The two types of surveys were implemented using essentially the same methodology and frequently contained similar or identical questions.[14] Importantly, three recent EB surveys (in 1998, 1999 and 2001) featured questions that address various aspect of social capital and identical questions were included in the Spring 2002 CCEB survey. We can therefore carry out comparative analysis with both sets of countries. In particular, the EB/CCEB surveys featured questions that we use to gauge three aspects of social capital: civic participation, access to social networks, and altruism (philanthropic generosity). These three components capture both quantitative and qualitative dimensions of social capital, since the first and, to some extent, the second aspect indicate objective associations or ties between individuals, while the last together with parts of the second reflect the subjectivity within a tie (e.g., altruism).[15] Table 1 presents the aggregate figures.

TABLE 1 HERE

The first measure in Table 1 is the average civic participation, measured as active membership in voluntary organizations. Specifically, the respondents were asked: "*From the following list, could you tell me in which of these organizations do you actively participate?*". The list of organizations included charities (social, communal or religious); religious or parish organizations other than charities; cultural or artistic organizations; trade unions or political parties; human rights movements or organizations; organizations for the protections of nature, animals and the

[12] Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Ireland, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

[13] Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia, and Turkey. Except Turkey, all of these countries have become members of the EU as of May 2004.

[14] See WZB (2003). The surveys are carried out by means of face-to-face interviews, with approximately 1,000 respondents per country, except the following countries: Germany (1,000 respondents in each West and East Germany), United Kingdom (additional 300 respondents in Northern Ireland), Poland and Turkey (2,000 respondents each), and Cyprus, Luxembourg and Malta (500 respondents each). The overall sample size thus is approximately 16,000 for the EB surveys and 14,000 for the CCEB. The same questionnaire is used in all countries of the respective group (EB or CCEB), the questionnaire is translated and interviewers are local staff. The surveys are constructed so as to be broadly representative at the national level. The data report East Germany and Northern Ireland as separate entities, and we retain this distinction.

[15] For a detailed discussion, see Paxton (1999).

environment; youth organizations such as scouts or youth clubs; consumer organizations; sports clubs and associations; hobby clubs; and other clubs or organizations. It should be stressed that the question asks the respondents to list those organizations in which they *actively* participate. We believe that active participation is crucial for the link between membership in voluntary organizations and social capital: one builds up social capital through interacting with fellow members and participating in common activities, not by paying membership dues or holding a membership card.[16] Unfortunately, the question only records each *type* of organization, thereby disregarding multiple memberships in similar organizations (for example, one may be a member of two or three different sports clubs). As the survey asked about membership in 11 types of organizations (including an 'other' category), the maximum value that this variable can attain is 11. To be consistent with the literature (see section 2.2), we split the membership count into Putnamesque and Olsonian variables in the adjacent columns. No question on trust was included in the Eurobarometer surveys. For comparative purposes, the last two columns of the first part of Table 1 report country averages of level of generalized trust as measured by the two most recent rounds of the World Value Surveys: 1990 and 1996. Specifically, the figures measure the fraction of respondents who declared that most people could be trusted when asked "*Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?*". This is, however, not a measure used in our analysis.[17,18]

The first three columns of the second part of Table 1 measure the presence of social networks that one can rely on in need. Specifically, respondents were asked: "*If you had any of the following problems (you were feeling depressed; you needed help finding a job for yourself or a member of your family;* or *you needed to borrow money*

[16] An implication of this definition is that being a member of a religion and attending religious services is not regarded as social capital, unless one *actively* participates in religious or parish organizations. Applying a more liberal definition would result in artificially high levels of social capital for countries with high identification with a dominant religion (e.g. the Roman-Catholic church in Poland or Italy) .

[17] Some argue that generalized trust is not an adequate measure of social capital, because it does not differentiate between trust and trustworthiness (see Bornhorst et al., 2004), and because it is context-dependent. For example, in an ethnically polarized society, a member of the minority group – even if perfectly trustworthy- will often neither be trusted by the majority of population nor him(her)self trust the members of the majority. In addition, the same individual would report considerably different generalized trust depending on the wording (or understanding) of the question: he or she would report high trust *vis-à-vis* members of own group but low trust vis-à-vis members of the majority group.

[18] Glaeser et al. (2000) provide a fine combination of experimental and field data to measure both concepts of trust and trustworthiness. For an interesting theoretical study of trustworthiness, as corresponding to a non-incentive based type of social capital, see Francois and Zabojnik (2005).

to pay an urgent bill, like electricity, gas, rent or mortgage) is there anyone you could rely on to help you, from outside your own household?". As these three networks are rather different in nature, we codify each as a separate binary variable equal to 1 if the individual has access to the network in question and 0 otherwise.

The last two columns of the second part of the table report the average extent of altruism among the respondents, based on the following two questions: "*Now thinking about poor or socially excluded people, in the last twelve months, have you done the following (given money or goods to poor or socially excluded people; given up some of your time to help poor or socially excluded people) at least once a month, less often or have you not done it?*". The answers are coded as 0 for those who never contributed money or given up their time, 1 for those who did so less than once a month, and 2 for those who did so more often.

The figures for each measure of social capital are presented in descending order. The average figures for the old EU members and the new member countries are also included. There are clear similarities in the ordering of countries. Whether the various indicators measure the same underlying phenomenon (i.e., social capital) or not can be assessed by means of simple correlation analysis. Table 2 presents the correlation matrix for the various measures at the aggregate level. Clearly, civic participation is very closely correlated with aggregate generalized trust: the correlation coefficients between trust and average participation, Putnamesque and Olsonian groups are all close to 0.8. The correlation analysis further suggests that Putnamesque and Olsonian groups are not necessarily that different: countries with high participation in one group also display high levels of participation in the other. Similarly, both groups are closely correlated with generalized trust. Nonetheless, for the sake of completeness, we maintain the distinction between Putnamesque and Olsonian groups in the remainder of our analysis.

TABLE 2 HERE

Countries where social networks are more prevalent tend to display also high levels of civic participation. A similarly high degree of correlation holds between networks and generalized trust. The only indicator that stands out as largely orthogonal to either civic participation or generalized trust is altruism. In contrast to

Putnam's (2001) finding, our data find both measures of philanthropic generosity being at best weakly correlated with the remaining variables.

Finally, based on Table 1, two observations can be made about the distribution of social capital across countries. First, of all the indicators listed in Table 1 except giving up one's time to help the poor and socially excluded, all show the old member countries as having on average higher stock of social capital than the new member countries. Given that the vast majority of the new EU members are post-communist countries, this observation seems to confirm the assertion of Paldam and Svendsen (2000, 2001) and Adam et al. (2004) that communism destroyed social capital by discouraging social interactions outside one's immediate network of friends and family. Second, there is a considerable degree of variation within both groups of countries – some new member countries have very favorable endowments of social capital whereas some old member countries fare rather poorly. A detailed analysis is provided in the following sections.

4 Individual determinants of social capital

In section 2, we described three types of indicators – civic participation, social networks, and altruism – that, as argued in the literature, measure the stock of social capital (or its various aspects). Based on our data, we showed that at the aggregate level, civic participation and social networks are indeed closely correlated with each other as well as with generalized trust, whereas correlation is at best weak vis-à-vis altruism. The high correlation of our measures of civic participation and networks with generalized trust – the variable used most frequently to study social capital – makes us confident about using these two measures to analyze factors that determine individual stock of social capital.

We view social capital as a productive asset that is built up through investment: it takes time, effort and often a financial outlay to accumulate social capital. Once built up, as with other types of capital (physical and human), social capital generates a return, depreciates over time and needs to be kept up to prevent it from depreciating and becoming obsolete. An individual's investment in social capital therefore should depend on the individual's socio-economic characteristics, in particular age, family background, level of human capital (education and occupation), and income (see Coleman, 1988). While our approach in this paper is purely empirical, this notion of

social capital can be supported by standard economic theory, as is done by Glaeser et al. (2002), whereby the individual's stock of social capital is the outcome of an individual maximization problem with limited resources. In addition, in line with our discussion in section 2, we also consider aggregate determinants of social capital such as economic development and quality of institutions. The former (e.g. income level and income equality) may help create more cohesive, legitimate societies and hence encourage the formation of social capital (Inglehart, 1990; Wilkinson, 1996). The latter (e.g. the rule of law or institutional transparency, and stability or continuity of democracy) are likely to affect the return to investment in any type of capital, including the social one. In more transparent and less corrupted societies, individuals are more willing to engage in civic activities (O'Connell, 2003). According to Paldam (2002), corruption is by far the best available measure of 'negative' social capital. Democracy is also an important factor influencing not only civic engagement but also voluntary membership in associations (Curtis et al., 2001; Schofer and Fourcade-Gourinchas, 2001). Therefore, individuals in countries with less transparent and less democratic institutions may be discouraged from investing and, in turn, will acquire less generalized social capital than their counterparts in countries with better institutional environment.

The dependent variables are two of the measures introduced in section 3: civic participation, and social networks.[19] As very few individuals participate in more than 3 organizations, we recoded civic participation so that it takes values 0, 1, 2, or 3, with the last being ascribed to anyone who participates in three or more organizations. The participation in Putnameque and Olsonian groups was recoded in the same way. Social networks remain defined as above: zero-one dummy variables indicating having access to the respective network.

As a first step, we relate the individual stock of social capital to various individual-level socio-demographic characteristics: gender, age, marital status, education, occupation, residency in urban vs. rural areas and income. Based on previous research, we should expect that social capital is higher among older people (Putnam, 1995) or follows a life-cycle pattern (Glaeser et al., 2000); married

[19] Despite the low correlation of altruism with either civic participation or social networks, using the two measures of helping the poor and socially excluded yields results broadly similar to those obtained with civic participation and social networks. Because of both space considerations and the slightly lower confidence that we have in this measure being indicative of the stock of social capital, the results obtained with altruism are not reported here. They can be obtained from the authors upon request.

individuals have a slightly higher stock of social capital (Putnam, 1995); education is positively correlated with social capital (Helliwell and Putnam, 1999; Glaeser et al., 2002); entrepreneurship (self-employment) contributes to a higher stock of social capital (Svendsen and Svendsen, 2004); residency in urban areas translates into lower social capital; and income is positively correlated with investment in social capital (Rupasingha et al., 2006). To account for country-specific factors, we also include country dummies (East Germany and Northern Ireland are reported as separate entities in the EB data sets; because of the potentially special nature of these two regions and we maintain this distinction). Table 3 reports the regression results obtained with civic participation for the new member countries[20], while Table 4 presents those for the old member states. Because of the potentially important difference between Putnamesque and Olsonian groups, we carry out the regression analysis first with overall participation and then separate it into the two types of voluntary organizations. Table 5 similarly reports the results of regressions with access to social networks for the new member states while Table 6 reports analogous results for the old member states of the European Union.

TABLES 3 AND 4 HERE

Looking first at the overall civic participation, a number of individual characteristics appear to shape individual investment in social capital. These determinants confirm the main findings of previous research. Importantly, the determinants of social capital appear similar in the old and the new member countries of the EU.

TABLES 5 AND 6 HERE

Most of our findings show not only consistency across the two measures of social capital but also that the determinants of social capital in the old and the new member countries are in fact very similar. The main exception is the age profile of social

[20] Turkey is not included in our analysis for two reasons. First, due to its unclear status with respect to membership in the EU. Second, because it differs from the other new member countries in many important aspects such as the level of development, and cultural and religious traditions Nonetheless, including Turkey in the regressions or omitting also Cyprus and Malta (which do not share the post-communist legacy characteristic of the other new member countries) produce qualitatively very similar results and are therefore not reported here but can be obtained upon request.

capital: civic participation tends to increase with age (possibly following a hump-shaped pattern) whereas access to social networks falls with age. Furthermore, being self-employed is associated with higher civic participation in the new members but not in the old member countries, although in both sets of countries the self-employed appear to have better access to social networks. The remaining variables affect civic participation and social networks similarly: higher education, higher income, being a student and being a white-collar worker are all positively correlated with social capital. Being unemployed, on the other hand, translates into lower social capital.

When comparing participation in Putnamesque and Olsonian groups, only a few differences emerge. Education and income are positively correlated with active participation in both types of groups. The age profile of social capital over one's lifetime is more pronounced and steeper for Olsonian groups – participation in collective action aimed at distributive objectives increases and subsequently falls more dramatically with age than participation in Putnamesque groups. The unemployed, retirees, house-persons and females, on the other hand, tend to stay away from Olsonian groups but do participate in Putnamesque ones – they pursue their interests and hobbies but not distributional objectives. Married people are less likely to participate in Putnamesque groups but more likely to get organized in Olsonian ones. The self-employed and white-collar workers, finally, tend to participate more often in Putnamesque rather than in Olsonian groups.[21]

The positive relationship between education and the stock of social capital suggests that social and human capital are complementary – individuals who acquire a high stock of one also invest in the other.[22] In addition, education may reduce the cost of investing in social capital by improving one's communication skills, increasing social interaction and networking, or by generating positive externalities (Helliwell and Putnam, 1999; Rupasingha et al., 2006). The positive effect of income confirms the existing empirical findings but contradicts the theoretical predictions that investment in social capital should fall with opportunity cost of time (wage) (Glaeser et al. (2002). This finding could be reconciled by recognizing that obtaining social capital may require not only time but also monetary outlays. Furthermore, this result can be indicative of reverse causality. As income is contemporaneous to social capital

[21] This finding confirms the argument provided by Svendsen and Svendsen (2004: 3), that "entrepreneurship [ ] facilitates voluntary collective action and the creation of inclusive types of social capital", thus higher participation in the Putnamesque organizations.

[22] For an early evidence and discussion, see Coleman (1988).

(unlike education which is typically acquired at a relatively young age), finding positive correlation between income and social capital may also be due to the positive impact of social capital on earnings.[23] The negative relationship between being unemployed, retirees, house-persons or female on the stock of social capital may reflect their exclusion from the labor market. These groups of individuals, especially females, are expected to have a higher stock of group-specific social capital than the generalized one (see Stoloff et al., 1999; and WB, 2002).

Since the individual determinants of social capital are to a large extent very similar in the old and the new member countries of the EU, we hypothesize that country-specific factors play an important role in accounting for the apparent gap (cf. section 3), as insinuated by the high and significant country dummies in tables 3-6. In the next section, we consider aggregate determinants of social capital.

5 Economic development and institutional quality

In this section, we extend the analysis of determinants of individual stock of social capital by considering, alongside individual characteristics, aggregate factors such as economic development and the quality of institutions. In doing so, we hope to gain additional insights into the factors that underlie the formation of social capital at the individual level. Moreover, country-specific economic and institutional conditions may help account for the gap in the level of social capital between the old and the new member states of the EU.

As we want to explain the differences in the formation of social capital across countries, we merge the data for both old and new member countries of the EU and include a dummy variable for the new members (while dropping the country dummies). Obtaining a significant coefficient on the 'new members' dummy would

[23] As a consequence of possible endogeneity in social capital, the coefficients estimated for income may be biased. While we lack suitable instruments for income to remedy this potential endogeneity bias, we re-estimated all regressions while omitting the income variable. The results for the other variables remain essentially the same, regardless of whether income is included or not: even if the coefficient for income is biased, this apparently does not affect the remaining coefficients. Importantly, our analysis is not affected by another type of endogeneity that is likely in aggregate-level studies: social capital determining economic outcomes such as economic growth or the level of economic development (see Durlauf, 2002). This is because our analysis is based on individual data. While economic outcomes are likely to be endogenous in aggregate (country-level) social capital only, each individual respondent is too small for her social capital to have an impact on aggregate economic outcomes.

indicate that there is indeed a gap between the old and the new members that cannot be explained by the variables included in the regression.

At first, we run the regressions only with individual characteristics. These results are reported in Table 7, again for civic participation (overall active participation in voluntary organization as well as participation in Putnamesque and Olsonian groups), and for access to social networks. The impact of individual characteristics mirrors our previous findings: age, education, income, occupation and employment status are all important determinants of the individual stock of social capital (note, however, that in this merged data set the self-employed now display significantly lower civic participation whereas before the self-employed dummy appeared with positive coefficient for the new member countries and insignificant or marginally significant negative coefficient for the old member countries).

The results of the first regression, with overall civic participation, confirm the observation (based on country averages reported in Table 1) that the new members lag significantly behind the old member countries in their stock of social capital: the coefficient on the new members dummy is negative and strongly significant. When distinguishing between Putnamesque and Olsonian groups, an interesting result appears: the new member countries do better than old member countries with respect to participation in Putnamesque groups, but do worse for Olsonian groups. The coefficient estimate, however, is much lower (in absolute value) for the former than for the latter. Hence, when the two types of groups are pooled together in 'overall civic participation', the lower participation in Olsonian groups more than offsets the effect of higher participation in Putnamesque ones and the new member countries thus appear to lag behind the old member countries. This result is particularly interesting because it cannot be readily discerned from the country averages in Table 1; in that table, new member countries appear to lag behind with respect to both Olsonian and Putnamesque groups. It is only after accounting for individual characteristics that this striking difference becomes apparent.

As we will see later, when accounting for institutional factors, this finding seems to reflect a general dissatisfaction with, and lack of trust in, formal institutions in the new member countries. This dissatisfaction is particularly strong with respect to the Olsonian groups such as political parties and unions. This has its roots in communism (common to all new member countries except Cyprus and Malta) when political

activity was not voluntary, trade unions were highly politicized and subordinated to the communist party and civil society emerged in a bottom-up fashion (Tong, 1994).

The gap in social capital also appears when considering access to social networks: across all three sub-measures, the new members appear to lag significantly behind the old member countries of the EU.

TABLE 7 HERE

To assess the impact of country-level economic and institutional environment, we augmented the regressions with a number of aggregate indicators of economic development and institutional quality: GDP per capita (in purchasing-power-parity terms), the Gini coefficient of income inequality, the Transparency International corruption-perception index (inverted so that higher values indicate lower corruption), the average of indexes of political freedom and civil liberties reported by the Freedom House (in alternative regression specifications, we replaced this democracy index with a measure of the fraction of years since 1972 that the country was classified by the Freedom House as free or partially free), economic freedom index compiled by the Frasier Institute, and the average economic growth over the preceding three years. Though we tried several alternative regression specifications[24], the results are broadly similar and therefore we report, in Table 8, only one of the most general regression specifications, relating individual stock of social capital to economic development (proxied by per-capita GDP), income inequality, pervasiveness of corruption and economic freedom.[25]

TABLE 8 HERE

The most interesting finding is that once aggregate economic development and institutional quality are controlled for, the new member countries seem no longer to be different from the old members with respect to their stock of social capital. Moreover, the new member countries appear with a positive coefficient in the first three regressions, indicating that the new members display significantly *higher* active participation in voluntary organizations, Putnamesque and Olsonian alike, than one

[24] Additional results can be obtained from the authors upon request.

[25] Note that we adjusted the standard errors for the fact that aggregate and individual variables are measured at different levels of aggregation.

would expect given their level of economic development and institutional quality. In fact, already when controlling only for GDP per capita, the significance of the new members dummy is driven below conventional levels, or the dummy appears significantly positive, in all six regressions (specifically, the dummy appears with a significantly positive coefficient in the regression with Putnamesque groups and not significant otherwise).

The impact of country-specific economic and institutional conditions is in line with previous research. Higher per-capita income tends to be associated with more frequent civic participation, although the pattern often appears not significant when additional aggregate indicators are included in the regression (as is the case in the regressions reported in Table 8). Individuals in countries with high income inequality and especially widely-spread corruption (the strongest significant variable) tend to acquire less social capital. Economic freedom seems to encourage investment into social capital.

These patterns are very intuitive. Income inequality reflects the intensity of social conflict or polarization in a country (see Knack and Keefer, 1997; Rodrik, 1999; Rupasingha et al., 2006). Socially polarized countries, not surprisingly, end up with lower investment in generalized social capital. Rampant corruption and extensive regulation of the economy reduce the returns on any kind of investment, whether it is in social capital or other productive capacities. Therefore, both formal and informal institutions (economic freedom belonging to the former, while corruption being an expression of the latter) matter for individual acquisition of generalized social capital.

Finally, it is reassuring to note that the individual socio-demographic attributes (education, occupation, unemployment and income) remain strongly significant after controlling for aggregate determinants of social capital. Hence, both individual and aggregate factors play important roles in underlying individual decisions on acquiring social capital.

6 Conclusion

Using recent Eurobarometer surveys, this paper presents new and previously unavailable comparative data featuring a number of alternative measures of social capital for a sample of 28 European countries: including the old member countries of the European Union and countries that since 2004 have joined the EU as new

members (mainly Central and Eastern European countries). Focusing on civic participation and access to social networks as two key (quantitative and qualitative) measures of social capital, we analyze the determinants of individual stock of social capital, considering individual (i.e., socio-demographic characteristics) and aggregate (i.e., economic development and quality of institutions) factors alike. The results confirm the gap in the stock of social capital between developed Western countries and the formerly communist countries of Central and Eastern Europe. The existence of such a gap was highlighted by Paldam and Svendsen (2000) and Adam et al. (2004) who attribute it to the legacy of communism. Additionally, the analysis presented here reveals that while the stock of social capital at the individual level is affected by very similar factors in both groups of countries, the differences in individual-level determinants cannot fully account for the variation at the aggregate level. Once we include aggregate measures of economic development and quality of institutions, however, the gap disappears. This finding thus indicates that the low average stock of social capital in Central and Eastern European countries can be attributed to the lower level of economic development and the lower quality of institutions in the new member countries. With respect to the latter, the effect of corruption seems to be particularly important.

Although a convergence in formal institutions between the old and the new member states has to a large extent been accomplished (largely as a prerequisite of their accession to the EU), there remains a mismatch between these 'harmonized' formal institutions and the existing informal institutions in the new member countries (see Pejovich, 2003, for a broader discussion). This lack of correspondence, embodied in the prevalence of corruption and other predatory activities, may be the underlying reason for the gap in social capital. This argument can be reinforced by our finding that the participation in Olsonian groups (formal political groups and parties or unions) is much lower than in Putnamesque groups in the new member countries, reflecting the individuals' lack of trust in formal institutions. In this respect, we agree with previous research that argues that social capital (i.e., voluntary participation in organizations) is not merely dependent on individuals' wealth, education or particular interests but also on the cultural and institutional arrangements defined at the national level (Schofer and Fourcade-Gourinchas, 2001).

The enlargement of the European Union is expected to foster democracy and encourage adoption of sound economic policies in the new member countries. This

will, in turn, discourage rent-seeking, motivate a rewarding scheme of leaderships based on performance, enhance public trust in state's actions and promote civic spirit. All this should diminish the inherited 'negative' social capital and encourage formation of 'positive' social capital. Thus, once Central and Eastern European countries catch up with the West in terms of economic development and institutions, they are very likely to close the gap in social capital as well. For this to be possible, however, a gradual harmonization of formal rules and informal norms between the two groups of countries should be of primary importance.

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Table 1: Alternative measures of social capital

Average Participation		**Olson Groups**		**Putnam Groups**		**Trust**	**WVS90**	**WVS96**
Sweden	2.00	Sweden	1.00	Netherlands	1.08	Sweden	66.10	56.59
Denmark	1.78	Denmark	0.79	Sweden	1.00	Finland	62.72	47.92
Netherlands	1.70	Netherlands	0.62	Denmark	0.99	Denmark	57.66	
Finland	1.24	Finland	0.44	N. Ireland	0.81	Netherlands	53.47	
Luxembourg	1.03	Luxembourg	0.34	Finland	0.80	Ireland	47.37	
		EU-OM						
Czech Rep.	0.94	**Average**	**0.28**	Ireland	0.74	Great Britain	43.68	29.09
Germany West	0.93	Austria	0.25	Germany West	0.73	N. Ireland	43.62	
EU-OM						**EU-OM**		
Average	**0.91**	Great Britain	0.22	Czech Rep.	0.73	**Average**	**41.16**	**37.74**
N. Ireland	0.90	Czech Rep.	0.21	Luxembourg	0.69	Germany West	37.86	39.92
Great Britain	0.88	Slovakia	0.20	Great Britain	0.67	Italy	35.30	
Austria	0.88	Cyprus	0.20	Slovakia	0.66	Poland	34.51	16.91
Slovakia	0.86	Germany West	0.19	**EU Average**	**0.64**	Spain	34.24	28.65
Ireland	0.84	Belgium	0.17	Austria	0.63	Belgium	33.50	
Belgium	0.73	Turkey	0.15	Malta	0.57	Austria	31.82	
Cyprus	0.72	Slovenia	0.14	Slovenia	0.56	Lithuania	30.80	21.31
Slovenia	0.70	Malta	0.13	Belgium	0.56	Bulgaria	30.40	23.69
Malta	0.69	**CC Average**	**0.12**	Cyprus	0.53	Czech Rep.	30.25	
France	0.58	Germany East	0.12	Estonia	0.48	Estonia	27.58	21.06
Estonia	0.57	France	0.10	France	0.48	Germany East	25.60	24.28
EU-NM				**EU-NM**				
Average	**0.55**	Hungary	0.10	**Average**	**0.42**	Hungary	24.59	
						EU-NM		
Germany East	0.54	Estonia	0.10	Germany East	0.42	**Average**	**23.96**	**18.28**
Italy	0.49	Ireland	0.10	Italy	0.40	Slovakia	23.01	
Lithuania	0.48	N. Ireland	0.10	Lithuania	0.39	France	22.79	
Latvia	0.47	Italy	0.09	Latvia	0.38	Portugal	21.67	
Turkey	0.43	Latvia	0.09	Hungary	0.30	Latvia	19.05	23.92
Hungary	0.40	Lithuania	0.09	Spain	0.29	Slovenia	17.39	15.54
Poland	0.35	Romania	0.08	Portugal	0.29	Romania	16.07	
Spain	0.35	Poland	0.07	Poland	0.28	Turkey	9.98	5.50
Portugal	0.34	Spain	0.06	Turkey	0.28	Cyprus		

Greece	0.31	Greece	0.05	Greece	0.26	Greece
Romania	0.29	Portugal	0.05	Romania	0.21	Luxembourg
Bulgaria	0.18	Bulgaria	0.05	Bulgaria	0.13	Malta

Table 1 (continued)

Network: Depressed		**Network: Job**		**Network: Money**		**Altruism: Money**		**Altruism: Time**	
Ireland	0.93	Ireland	0.86	Ireland	0.91	N. Ireland	1.29	Romania	0.67
Netherlands	0.92	Spain	0.80	Spain	0.91	Malta	1.22	Cyprus	0.64
Spain	0.92	Netherlands	0.79	Sweden	0.90	Ireland	1.17	Luxembourg	0.56
Sweden	0.91	Luxembourg	0.74	Netherlands	0.88	Netherlands	1.09	Finland	0.55
Denmark	0.90	Denmark	0.74	Denmark	0.87	Romania	1.08	Netherlands	0.54
Slovakia	0.90	Austria	0.74	N. Ireland	0.85	Cyprus	0.93	Ireland	0.51
N. Ireland	0.89	N. Ireland	0.74	Finland	0.84	Luxembourg	0.93	Slovenia	0.50
Great Britain	0.88	Portugal	0.73	Italy	0.82	Great Britain	0.92	Turkey	0.49
France	0.87	Great Britain	0.72	Czech Rep.	0.80	Italy	0.92	Austria	0.49
				EU-OM					
Czech Rep.	0.86	Slovenia	0.72	**Average**	**0.80**	Poland	0.89	Hungary	0.43
EU-OM									
Average	**0.86**	Italy	0.70	France	0.79	Lithuania	0.89	N. Ireland	0.42
		EU-OM							
Luxembourg	0.86	**Average**	**0.70**	Slovakia	0.79	Spain	0.87	Poland	0.40
								EU-OM	
Italy	0.85	France	0.69	Slovenia	0.79	**EU Average**	**0.84**	**Average**	**0.40**
								EU-NM	
Finland	0.85	Czech Rep.	0.67	Portugal	0.79	Finland	0.84	**Average**	**0.39**
Austria	0.84	Sweden	0.66	Great Britain	0.79	Turkey	0.82	Italy	0.39
Malta	0.84	Belgium	0.65	Luxembourg	0.78	Greece	0.82	Greece	0.38
Portugal	0.84	Hungary	0.63	Estonia	0.77	Austria	0.78	Malta	0.38
Poland	0.83	Finland	0.61	Poland	0.76	France	0.75	Portugal	0.37
Belgium	0.81	Germany West	0.61	Austria	0.76	Sweden	0.74	Lithuania	0.35
						EU-NM			
Germany West	0.80	Cyprus	0.59	Hungary	0.73	**Average**	**0.73**	Latvia	0.34
Hungary	0.80	Greece	0.56	Greece	0.70	Denmark	0.72	Belgium	0.33
				EU-NM					
Slovenia	0.78	Germany East	0.54	**Average**	**0.70**	Slovenia	0.70	Spain	0.33
Germany East	0.78	Poland	0.53	Lithuania	0.68	Portugal	0.66	Great Britain	0.32
EU-NM		**EU-NM**							
Average	**0.78**	**Average**	**0.53**	Romania	0.68	Belgium	0.65	Germany East	0.32
Estonia	0.77	Slovakia	0.51	Germany West	0.68	Hungary	0.65	Denmark	0.31
Lithuania	0.77	Lithuania	0.50	Bulgaria	0.67	Germany East	0.60	Germany West	0.31

Romania	0.73	Malta	0.50	Belgium	0.66	Latvia	0.59	France	0.30
Turkey	0.71	Estonia	0.49	Cyprus	0.65	Germany West	0.57	Sweden	0.30
Latvia	0.71	Turkey	0.48	Germany East	0.62	Slovakia	0.52	Slovakia	0.26
Bulgaria	0.70	Romania	0.45	Latvia	0.60	Czech Rep.	0.45	Estonia	0.22
Cyprus	0.70	Latvia	0.40	Turkey	0.58	Estonia	0.41	Czech Rep.	0.20
Greece	0.69	Bulgaria	0.37	Malta	0.56	Bulgaria	0.32	Bulgaria	0.16

Notes:

Average participation is the average number of voluntary organizations in which respondents actively participate. Putnam groups are charities, religious organizations, cultural or artistic organizations, youth organizations, sports clubs and associations, hobby clubs, and other clubs or organizations. Olsonian groups are trade unions or political parties, human rights movements or organizations, organizations for the protections of nature, animals and the environment, and consumer organizations. The maximum possible value is 11 for average participation, 7 for Putnam groups and 4 for Olson groups. Network variables take the value of one if the respondents feel she has someone (besides the members of her immediate household) to rely on when feeling depressed, in need of a new job for herself or a family member, or to borrow money urgently, and zero otherwise. Altruism variables measure whether the respondent contributed money or gave up some of her time during the preceding 12 months to help poor or socially excluded people. It takes values of 0 (never), 1 (less than once a month) and 2 (more than once a month). These variables are based on the following surveys: EB50.1 (1998) for average participation, EB56.1 (2001) for networks, EB52.1 (1999) for altruism, and CCEB 2002.1 for all three types of variables for the new member countries. See the text for further details and the precise wording of the relevant questions. We are grateful to the Gallup Organisation Europe for kindly making these data available to us.

Trust is based on the World Value Surveys rounds of 1990 and 1996-97. The numbers correspond to the fraction of the respondents who declare that most people can be trusted. Blank cell indicates that the country did not participate in that survey round and therefore no data are available.

Table 2: Correlation matrix with alternative measures of social capital

	Average Participation	Olson Groups	Putnam Groups	Network: Depressed	Network: Job	Network: Money	Altruism: Money	Altruism: Time	Trust (WVS90)
Olson Groups	0.937								
Putnam Groups	0.949	0.779							
Network: Depressed	0.594	0.443	0.665						
Network: Job	0.451	0.297	0.543	0.753					
Network: Money	0.529	0.452	0.539	0.792	0.742				
Altruism: Money	0.145	0.039	0.228	0.295	0.373	0.167			
Altruism: Time	0.059	0.047	0.067	-0.108	0.204	-0.022	0.649		
Trust (WVS90)	0.804	0.748	0.767	0.653	0.463	0.671	0.309	0.014	
Trust (WVS96)	0.836	0.790	0.805	0.624	0.344	0.566	0.038	-0.088	0.915

Table 3: Individual determinants of civic participation in new member countries

	Overall Civic Participation	std. error	Putnam Groups	std. error	Olsonian Groups	std. error
Female	-0.275***	(0.049)	-0.258***	(0.052)	-0.200***	(0.073)
Married	-0.131**	(0.059)	-0.173***	(0.063)	0.082	(0.091)
Age	0.013	(0.010)	-0.011	(0.010)	0.086***	(0.017)
Age squared	-0.0001	(0.0001)	0.0001	(0.0001)	-0.0007***	(0.0002)
Children	-0.022	(0.025)	-0.022	(0.027)	-0.038	(0.039)
HH Size	-0.030	(0.024)	-0.019	(0.026)	-0.060	(0.037)
Secondary	0.297***	(0.081)	0.286***	(0.087)	0.426***	(0.141)
University	0.763***	(0.090)	0.717***	(0.096)	0.873***	(0.149)
Student	1.225***	(0.139)	1.355***	(0.145)	0.668***	(0.245)
Self-employed	0.214*	(0.116)	0.404***	(0.121)	-0.077	(0.155)
White collar	0.123*	(0.075)	0.190**	(0.080)	0.050	(0.099)
House person	-0.439***	(0.117)	-0.146	(0.122)	-1.177***	(0.229)
Unemployed	-0.424***	(0.114)	-0.296**	(0.123)	-0.613***	(0.185)
Retiree	-0.358***	(0.095)	0.018	(0.100)	-1.050***	(0.149)
Farmer/fisherman	-0.191	(0.206)	0.023	(0.230)	-0.329	(0.311)
UE History: 1	-0.359***	(0.083)	-0.303***	(0.088)	-0.297**	(0.124)
UE History: 2+	-0.258**	(0.107)	-0.137	(0.111)	-0.446***	(0.180)
HH Income 2nd Quartile	0.103	(0.080)	0.077	(0.085)	0.186	(0.131)
HH Income 3rd Quartile	0.313***	(0.082)	0.254***	(0.087)	0.315**	(0.132)
HH Income 4th Quartile	0.378***	(0.089)	0.359***	(0.094)	0.263*	(0.143)
Small/Medium town	-0.093	(0.058)	-0.132**	(0.061)	-0.003	(0.086)
City	-0.350***	(0.064)	-0.347***	(0.068)	-0.258***	(0.098)
Cyprus	1.632***	(0.149)	1.881***	(0.166)	1.104***	(0.212)
Czech Rep.	1.924***	(0.131)	2.141***	(0.150)	1.185***	(0.185)
Estonia	1.124***	(0.130)	1.425***	(0.150)	0.312	(0.196)
Hungary	0.998***	(0.130)	1.168***	(0.150)	0.680***	(0.186)
Latvia	1.044***	(0.127)	1.317***	(0.149)	0.330*	(0.196)
Lithuania	1.100***	(0.133)	1.392***	(0.154)	0.128	(0.210)
Malta	1.605***	(0.163)	1.968***	(0.178)	0.874***	(0.244)
Poland	0.522***	(0.123)	0.748***	(0.145)	0.164	(0.185)
Romania	0.425***	(0.134)	0.531***	(0.160)	0.230	(0.198)
Slovakia	2.047***	(0.127)	2.276***	(0.145)	1.296***	(0.182)
Slovenia	1.501***	(0.126)	1.704***	(0.147)	0.800***	(0.186)
Log likelihood	-7,596.218		-6,625.982		-3273.130	
Pseudo R2	0.080		0.084		0.082	
Wald χ^2	1224.67***		1,093.05***		562.47***	
No. of observations	8,899		8,901		8,899	

Notes: Estimated with ordered logit; Significance levels: *** 1%, ** 5% and * 10%. Civic participation is measured as active participation in voluntary organizations (see the text for precise wording of the question and list of organizations). Putnam groups are charities, religious organizations, cultural or artistic organizations, youth organizations, sports clubs and associations, hobby clubs, and other clubs or organizations. Olsonian groups are trade unions or political parties, human rights movements or organizations, organizations for the protections of nature, animals and the environment, and consumer organizations.

Table 4: Individual determinants of civic participation in old member countries

	Overall Civic Participation	std. error	Putnam Groups	std. error	Olsonian Groups	std. error
Female	-0.242***	(0.041)	-0.215***	(0.042)	-0.166***	(0.054)
Married	0.020	(0.050)	-0.022	(0.050)	0.228***	(0.070)
Age	0.041***	(0.007)	0.022***	(0.008)	0.081***	(0.012)
Age squared	-0.0004***	(0.0001)	-0.0002**	(0.0001)	-0.0008***	(0.0001)
Children	-0.031	(0.031)	-0.071**	(0.032)	0.120***	(0.044)
HH Size	0.027	(0.022)	0.074***	(0.023)	-0.159***	(0.035)
Secondary	0.291***	(0.057)	0.261***	(0.059)	0.328***	(0.082)
University	0.837***	(0.064)	0.728***	(0.067)	0.789***	(0.088)
Student	1.015***	(0.098)	1.153***	(0.104)	0.355***	(0.143)
Self-employed	-0.140	(0.090)	0.120	(0.089)	-0.649***	(0.123)
White collar	0.090	(0.059)	0.116*	(0.061)	-0.037	(0.074)
House person	-0.199***	(0.080)	0.034	(0.081)	-0.690***	(0.113)
Unemployed	-0.165*	(0.090)	-0.020	(0.092)	-0.332***	(0.123)
Retiree	-0.095	(0.081)	0.164*	(0.085)	-0.521***	(0.112)
Farmer/fisherman	0.291**	(0.150)	0.407***	(0.163)	0.096	(0.217)
HH Income 2nd Quartile	0.249***	(0.060)	0.195***	(0.062)	0.269***	(0.084)
HH Income 3rd Quartile	0.649***	(0.064)	0.551***	(0.065)	0.644***	(0.091)
HH Income 4th Quartile	0.756***	(0.069)	0.636***	(0.071)	0.723***	(0.098)
Denmark	1.716***	(0.110)	0.952***	(0.113)	1.991***	(0.149)
Germany West	0.552***	(0.112)	0.645***	(0.113)	0.109	(0.165)
Greece	-0.979***	(0.124)	-0.914***	(0.127)	-0.933***	(0.208)
Italy	-0.415***	(0.129)	-0.361***	(0.131)	-0.409**	(0.206)
Spain	-0.697***	(0.134)	-0.681***	(0.138)	-0.722***	(0.226)
France	-0.285***	(0.115)	-0.173	(0.118)	-0.584***	(0.182)
Ireland	0.520***	(0.131)	0.657***	(0.135)	-0.126	(0.207)
N-Ireland	0.501***	(0.177)	0.637***	(0.182)	-0.233	(0.273)
Luxembourg	0.747***	(0.152)	0.537***	(0.146)	0.929***	(0.215)
Netherlands	1.753***	(0.112)	1.307***	(0.113)	1.753***	(0.154)
Portugal	-0.688***	(0.128)	-0.602***	(0.132)	-0.950***	(0.221)
Great Britain	0.817***	(0.123)	0.736***	(0.124)	0.665***	(0.170)
Germany East	-0.202*	(0.113)	-0.131	(0.116)	-0.457***	(0.177)
Finland	1.143***	(0.108)	0.702***	(0.112)	1.455***	(0.149)
Sweden	2.073***	(0.143)	0.984***	(0.150)	2.620***	(0.184)
Austria	0.478***	(0.119)	0.408***	(0.119)	0.513***	(0.168)
Log likelihood	-1,1367.22		-10,210.34		-5,870.042	
Pseudo R2	0.127		0.081		0.198	
Wald χ^2	2,923.19***		1,568.99***		2,273.74	
No. of observations	10,699		10,699		10,699	

Notes: Estimated with ordered logit; Significance levels: *** 1%, ** 5% and * 10%. Civic participation is measured as active participation in voluntary organizations (see the text for precise wording of the question and list of organizations). Putnam groups are charities, religious organizations, cultural or artistic organizations, youth organizations, sports clubs and associations, hobby clubs, and other clubs or organizations. Olsonian groups are trade unions or political parties, human rights movements or organizations, organizations for the protections of nature, animals and the environment, and consumer organizations.

Table 5: Individual determinants of social networks in new member countries

	Networks if depressed	std. error	Networks if needs job	std. error	Networks to borrow	std. error
Female	0.343***	(0.057)	-0.119**	(0.050)	0.081	(0.053)
Married	0.096	(0.070)	0.062	(0.062)	0.127*	(0.066)
Age	-0.059***	(0.011)	-0.065***	(0.010)	-0.071***	(0.010)
Age squared	0.0004***	-0.0001	0.0005***	-0.0001	0.0006***	-0.0001
Children	0.042	(0.027)	0.026	(0.025)	0.086***	(0.026)
HH Size	-0.156***	(0.027)	-0.148***	(0.024)	-0.181***	(0.025)
Secondary	0.091***	(0.079)	0.122*	(0.075)	0.298***	(0.074)
University	0.275**	(0.092)	0.349***	(0.086)	0.459***	(0.087)
Student	0.385**	(0.172)	0.258*	(0.146)	0.235	(0.157)
Self-employed	0.344	(0.159)	0.486***	(0.130)	0.636***	(0.161)
White collar	0.098	(0.094)	0.217***	(0.078)	0.147*	(0.088)
House person	-0.084	(0.120)	-0.203*	(0.109)	0.011	(0.114)
Unemployed	-0.083	(0.113)	-0.255***	(0.104)	-0.084	(0.106)
Retiree	0.044	(0.106)	-0.052	(0.095)	-0.093	(0.100)
Farmer/fisherman	-0.234	(0.224)	0.193	(0.197)	-0.089	(0.213)
UE History: 1	-0.169**	(0.088)	-0.320***	(0.077)	-0.215***	(0.084)
UE History: 2+	-0.329***	(0.117)	-0.296***	(0.104)	-0.438***	(0.108)
HH Income 2nd Quartile	0.244***	(0.082)	0.278***	(0.079)	0.240***	(0.078)
HH Income 3rd Quartile	0.362***	(0.087)	0.399***	(0.081)	0.420***	(0.082)
HH Income 4th Quartile	0.621***	(0.098)	0.866***	(0.089)	0.749***	(0.094)
Small/Medium town	-0.064	(0.067)	-0.122**	(0.060)	-0.141**	(0.063)
City	-0.046	(0.073)	-0.055	(0.066)	-0.239***	(0.069)
Cyprus	-0.213	(0.138)	0.814***	(0.136)	-0.312**	(0.136)
Czech Rep.	0.815***	(0.147)	1.025***	(0.129)	0.339***	(0.137)
Estonia	0.030	(0.123)	0.154	(0.115)	0.162	(0.122)
Hungary	0.392***	(0.121)	1.072***	(0.112)	0.145	(0.116)
Latvia	-0.191	(0.119)	-0.113	(0.115)	-0.536***	(0.114)
Lithuania	-0.003	(0.131)	0.251**	(0.123)	-0.361***	(0.125)
Malta	0.750***	(0.173)	0.370**	(0.154)	-0.609***	(0.151)
Poland	0.629***	(0.112)	0.452***	(0.100)	0.285***	(0.105)
Romania	-0.087	(0.115)	0.233**	(0.113)	-0.189*	(0.112)
Slovakia	1.209***	(0.154)	0.528***	(0.118)	0.447***	(0.128)
Slovenia	0.150	(0.128)	1.258***	(0.121)	0.221*	(0.126)
Constant	2.470***	(0.299)	1.386***	(0.267)	2.648***	(0.285)
Log likelihood	-4,259.41		-4,938.50		-4,646.19	
Pseudo R2	0.055		0.092		0.057	
Wald χ^2	458.86***		859.85***		522.32***	
No. of observations	8,625		7,852		8,303	

Notes: Estimated with ordered logit; Significance levels: *** 1%, ** 5% and * 10%. Networks variables take value 1 if the respondent can rely on other people outside their immediate household if she feels depressed, needs a job for herself or a family member, or needs to borrow money to pay an urgent bill.

Table 6: Individual determinants of social networks in old member countries

	Networks if depressed	std. error	Networks if needs job	std. error	Networks to borrow	std. error
Female	0.557***	(0.062)	-0.043	(0.049)	0.191***	(0.056)
Married	-0.052	(0.068)	0.046	(0.055)	-0.003	(0.062)
Age	-0.027***	(0.011)	-0.039***	(0.009)	-0.025***	(0.010)
Age squared	0.0001	(0.0001)	0.0002***	(0.0001)	0.0001	(0.0001)
Secondary	0.213***	(0.076)	0.172***	(0.063)	0.093	(0.070)
University	0.396***	(0.095)	0.293***	(0.073)	0.205***	(0.084)
Student	0.713***	(0.181)	0.378***	(0.131)	0.538***	(0.157)
Self-employed	0.257*	(0.146)	0.105	(0.114)	0.367***	(0.135)
White collar	0.303***	(0.100)	0.124*	(0.075)	0.268***	(0.088)
House person	0.065	(0.124)	-0.082	(0.092)	0.126	(0.107)
Unemployed	-0.272**	(0.117)	-0.732***	(0.094)	-0.315***	(0.104)
Retiree	0.023	(0.115)	-0.115	(0.090)	-0.040	(0.105)
Farmer/fisherman	0.459*	(0.278)	-0.021	(0.215)	-0.003	(0.239)
HH Income 2nd Quartile	0.304***	(0.081)	0.301***	(0.066)	0.225***	(0.073)
HH Income 3rd Quartile	0.391***	(0.090)	0.477***	(0.073)	0.529***	(0.084)
HH Income 4th Quartile	0.548***	(0.104)	0.615***	(0.080)	0.652***	(0.093)
Small/Medium town	-0.063	(0.070)	-0.140***	(0.057)	-0.081	(0.064)
City	0.011	(0.077)	-0.021	(0.062)	0.015	(0.070)
Denmark	0.695***	(0.162)	0.217*	(0.130)	1.314***	(0.144)
Germany West	0.084	(0.144)	-0.212*	(0.126)	0.264**	(0.126)
Greece	-0.494***	(0.141)	-0.376***	(0.129)	0.345***	(0.130)
Italy	0.293*	(0.162)	0.256*	(0.144)	0.957***	(0.152)
Spain	1.142***	(0.185)	0.665***	(0.144)	1.807***	(0.172)
France	0.606***	(0.160)	0.165	(0.131)	0.857***	(0.136)
Ireland	1.489***	(0.286)	0.806***	(0.187)	1.573***	(0.219)
N-Ireland	0.978***	(0.285)	0.310	(0.204)	1.344***	(0.243)
Luxembourg	0.447***	(0.182)	0.348**	(0.155)	0.680***	(0.157)
Netherlands	1.228***	(0.200)	0.510***	(0.145)	1.628***	(0.175)
Portugal	0.316**	(0.157)	0.473***	(0.140)	0.874***	(0.143)
Great Britain	0.722***	(0.177)	0.326**	(0.143)	0.959***	(0.150)
Germany East	-0.024	(0.140)	-0.394***	(0.124)	0.068	(0.124)
Finland	0.232	(0.150)	-0.317***	(0.127)	1.156***	(0.140)
Sweden	1.079***	(0.167)	0.020	(0.125)	1.908***	(0.156)
Austria	0.062	(0.155)	0.299**	(0.141)	0.486***	(0.140)
Constant	1.501***	(0.281)	1.526***	(0.231)	0.801***	(0.253)
Log likelihood	-4,001.45		-5,622.07		-4,612.88	
Pseudo R2	0.080		0.074		0.091	
Wald χ^2	626.11***		788.80***		808.76***	
No. of observations	10,376		9,650		9,952	

Notes: Estimated with ordered logit; Significance levels: *** 1%, ** 5% and * 10%. Networks variables take value 1 if the respondent can rely on other people outside their immediate household if she feels depressed, needs a job for herself or a family member, or needs to borrow money to pay an urgent bill.

Table 7: Individual determinants of social capital: Pooled data

	Overall Civic Participation	std. error	Putnam Groups	std. error	Olsonian Groups	std. error	Networks if depressed	std. error	Networks if needs job	std. error	Networks to borrow	std. error
Female	-0.240***	(0.030)	-0.202***	(0.035)	-0.145***	(0.041)	0.421***	(0.040)	-0.077***	(0.033)	0.167***	(0.037)
Married	0.071**	(0.036)	0.111***	(0.042)	0.336***	(0.052)	-0.055	(0.046)	-0.008	(0.038)	0.016	(0.042)
Age	0.034***	(0.006)	0.031***	(0.007)	0.091***	(0.010)	-0.033***	(0.007)	-0.043***	(0.006)	-0.038***	(0.007)
Age squared	-0.0003***	(0.0001)	-0.0003***	(0.0001)	-0.0008***	(0.0001)	0.0002***	(0.0001)	0.0003***	(0.0001)	0.0003***	(0.0001)
Children	0.040***	(0.016)	0.036**	(0.019)	0.146***	(0.023)						
HH Size	-0.063***	(0.014)	-0.077***	(0.016)	-0.168***	(0.020)						
Secondary	0.522***	(0.043)	0.489***	(0.055)	0.635***	(0.067)	0.238***	(0.051)	0.082*	(0.045)	0.189***	(0.047)
University	1.103***	(0.047)	1.063***	(0.058)	1.320***	(0.069)	0.383***	(0.059)	0.241***	(0.051)	0.401***	(0.055)
Student	1.454***	(0.074)	1.266***	(0.090)	1.094***	(0.115)	0.626***	(0.116)	0.326***	(0.092)	0.488***	(0.102)
Self-employed	-0.200***	(0.069)	-0.243***	(0.078)	-0.618***	(0.091)	0.287***	(0.104)	0.295***	(0.084)	0.501***	(0.102)
White collar	0.120***	(0.045)	0.091*	(0.051)	-0.026	(0.056)	0.250***	(0.066)	0.239***	(0.052)	0.226***	(0.060)
House person	-0.338***	(0.060)	-0.474***	(0.076)	-0.973***	(0.094)	0.079	(0.080)	-0.068	(0.064)	0.011	(0.072)
Unemployed	-0.531***	(0.064)	-0.580***	(0.078)	-0.673***	(0.092)	-0.311***	(0.073)	-0.663***	(0.063)	-0.343***	(0.067)
Retiree	-0.350**	(0.058)	-0.387***	(0.070)	-0.769***	(0.086)	0.023	(0.074)	-0.079	(0.063)	-0.056	(0.068)
Farmer/fisherman	-0.227***	(0.108)	-0.266*	(0.140)	-0.408***	(0.159)	0.024	(0.165)	0.038	(0.142)	0.001	(0.150)
HH Income 2nd Quartile	0.162***	(0.045)	0.158***	(0.055)	0.181***	(0.066)	0.227***	(0.055)	0.253***	(0.048)	0.228***	(0.050)
HH Income 3rd Quartile	0.314***	(0.046)	0.268***	(0.056)	0.287***	(0.067)	0.284***	(0.058)	0.370***	(0.050)	0.388***	(0.054)
HH Income 4th Quartile	0.419***	(0.050)	0.364***	(0.059)	0.320***	(0.071)	0.504***	(0.065)	0.709***	(0.054)	0.606***	(0.060)
Small/Medium town							0.000	(0.046)	-0.133***	(0.039)	-0.091**	(0.043)
City							-0.063	(0.050)	-0.099**	(0.042)	-0.167***	(0.046)
New members	-0.949***	(0.035)	0.258***	(0.039)	-1.144***	(0.051)	-0.509***	(0.039)	-0.735***	(0.033)	-0.440***	(0.036)
Constant							2.054***	(0.179)	1.755***	(0.151)	1.845***	(0.164)
Log likelihood	-20,527.24		-14,013.01		-10,079.12		-8,734.46		-11,075.22		-9,840.80	
Pseudo R2	0.061		0.045		0.093		0.042		0.074		0.042	
Wald χ^2	2,435.37***		1,274.67***		1,716.89***		738.56***		1,543.71***		790.64***	
No. of observations	19,854		19,661		19,702		19,293		17,774		18531	

Notes: Estimated with logit or ordered logit; Significance levels: * 5% and ** 10%.

Table 8: Individual and aggregate determinants of social capital: Pooled data

	Overall Civic Participation	std. error	Putnam Groups	std. error	Olsonian Groups	std. error	Networks if depressed	std. error	Networks if needs job	std. error	Networks to borrow	std. error
Female	-0.258***	(0.055)	-0.220***	(0.065)	-0.195***	(0.068)	0.429***	(0.060)	-0.111***	(0.036)	0.124**	(0.050)
Married	-0.023	(0.056)	0.011	(0.071)	0.200***	(0.066)	-0.021	(0.056)	-0.015	(0.037)	0.039	(0.057)
Age	0.032***	(0.007)	0.028**	(0.012)	0.087***	(0.009)	-0.034***	(0.008)	-0.045***	(0.006)	-0.039***	(0.007)
Age squared	-0.0003***	(0.0001)	-0.0003**	(0.0001)	-0.0008***	(0.0001)	0.0002***	(0.0001)	0.0003***	(0.0001)	0.0003***	(0.0001)
Children	-0.030	(0.027)	-0.036	(0.033)	0.060	(0.039)						
HH Size	0.036	(0.023)	0.014	(0.026)	-0.073**	(0.029)						
Secondary	0.333***	(0.086)	0.353***	(0.112)	0.419***	(0.096)	0.193***	(0.071)	0.042	(0.063)	0.142*	(0.082)
University	0.837***	(0.090)	0.823***	(0.128)	0.908***	(0.091)	0.309***	(0.082)	0.193***	(0.067)	0.300***	(0.087)
Student	1.153***	(0.118)	0.933***	(0.225)	0.581***	(0.195)	0.520***	(0.132)	0.265*	(0.137)	0.393***	(0.144)
Self-employed	0.039	(0.095)	-0.064	(0.150)	-0.363***	(0.136)	0.341***	(0.114)	0.299***	(0.090)	0.524***	(0.107)
White collar	0.169**	(0.068)	0.129	(0.079)	0.064	(0.073)	0.274***	(0.070)	0.248***	(0.065)	0.268***	(0.064)
House person	-0.211	(0.153)	-0.394*	(0.201)	-0.664***	(0.247)	0.110	(0.135)	0.038	(0.095)	0.193**	(0.091)
Unemployed	-0.430***	(0.079)	-0.462***	(0.095)	-0.563***	(0.130)	-0.281***	(0.101)	-0.623***	(0.081)	-0.348***	(0.082)
Retiree	-0.203**	(0.089)	-0.244*	(0.142)	-0.676***	(0.170)	0.060	(0.078)	-0.024	(0.075)	-0.011	(0.077)
Farmer/fisherman	0.159	(0.248)	0.058	(0.261)	-0.070	(0.325)	0.039	(0.183)	0.108	(0.144)	-0.006	(0.157)
HH Income 2nd Quartile	0.146*	(0.072)	0.128	(0.091)	0.167**	(0.082)	0.182***	(0.064)	0.217***	(0.072)	0.162**	(0.067)
HH Income 3rd Quartile	0.478***	(0.095)	0.426***	(0.132)	0.486***	(0.127)	0.253***	(0.082)	0.358***	(0.071)	0.340***	(0.087)
HH Income 4th Quartile	0.513***	(0.114)	0.453***	(0.151)	0.466***	(0.170)	0.446***	(0.105)	0.709***	(0.088)	0.574***	(0.107)
Small/Medium town							-0.025	(0.058)	-0.129**	(0.057)	-0.081	(0.062)
City							-0.028	(0.065)	-0.057	(0.086)	-0.102	(0.074)
GDP per capita (thousands)	0.023	(0.024)	0.019	(0.027)	0.007	(0.022)	-0.001	(0.017)	0.000	(0.018)	-0.029**	(0.013)
Gini coefficient	-0.049*	(0.027)	-0.071**	(0.034)	-0.064**	(0.031)	-0.008	(0.022)	-0.022	(0.017)	-0.004	(0.020)
Non-corruption	0.249***	(0.092)	0.337***	(0.099)	0.461***	(0.108)	0.156	(0.102)	0.022	(0.104)	0.292***	(0.085)
Economic Freedom	0.422**	(0.176)	0.345*	(0.195)	0.116	(0.250)	-0.027	(0.155)	0.161	(0.168)	-0.170	(0.139)
New members	0.942***	(0.323)	2.436***	(0.409)	0.943**	(0.404)	-0.042	(0.300)	-0.414	(0.311)	-0.220	(0.244)
Constant							1.446	(1.173)	1.131	(0.951)	1.864*	(0.957)
F-statistics	12.88***		19.01***		36.11***		21.91***		71.25***		14.76***	
No. of observations	19019		18,841		18,882		18,460		17,010		17,758	

Notes: Estimated with logit or ordered logit; Significance levels: * 5% and ** 10%. Standard errors are adjusted to account for the fact that country-level and individual variables are observed at different levels of aggregation. GDP per capita is in thousands of US dollars adjusted for purchasing-power parity. Non-corruption is the corruption perception index as compiled by Transparency International, higher values indicate less corruption. Economic freedom is the index compiled by the Frasier Institute.

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